

Top Producer

March/April 2024

Challenging Farmers to Think Differently

HARD FALL OR SOFT LANDING?

Ag Economists'
Monthly Monitor

**"I want folks to do enough
risk management to hopefully
prevent the hard fall."**

—Scott Brown



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Top Producer

Challenging Farmers to Think Differently

MARCH/APRIL 2024

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SMART FARMING

AT THE 2024 TOP PRODUCER SUMMIT, I hosted a panel discussion about information overload and how artificial intelligence can make this sea of data more useful. It was just as important to highlight what is possible with technology as what the limitations are. I researched some reports from the consulting group McKinsey, and one of their senior partners, Noshi Kaka, said: “Technology never moves at the speed of technology. It actually moves at the speed of humans.”

In that way, you’re always going to be in the driver’s seat navigating the digital road of greater efficiencies, profitability and stewardship.

DIRECT FROM YOU AND FOR YOU

In a recent survey Farm Journal conducted with farmers, the top topic you and your peers want more of is “upgrades and advancements in agricultural technology and equipment.”

From drones and data to sensors and science, smart farming is a persistent management strategy that empowers farmers to collect, visualize and confidently act upon relevant insights. In turn, farmers can optimize efficiency and resources despite environmental uncertainties and remain resilient in the production of food, feed and fiber.

Farm Journal recently launched a smart farming initiative. Across our websites, magazines, broadcast platforms and social media, you’ll find our reporting on how to take your operation to the next level.

In this issue you’ll find a recap from our Top Producer Summit, which gathered more than 650 farmers from across 40 states. It continues to provide a platform that brings together some of the brightest leaders across agriculture, as well as a great stage to put our award winners for Top Producer of the Year, Women in Ag, and Next Gen in the spotlight.

We’re also continuing our smart farming coverage with some of the ideas in this realm you can bring to your farm. And we’re introducing you to our latest contributor, Darryl Matthews, who brings a new point of view on where to find opportunities. **TP**

Margy Eckelkamp

Editor, Top Producer

Top Producer

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Where to Make Room

With slimmer margins predicted this year, Mike Gunderson, chief credit officer at Farm Credit Illinois, shares three budget areas to examine more closely:

• CASH RENTS

"I know those aren't our favorite conversations to have, but if landlords renegotiated rents up while prices were climbing, then we ought to be able to have a serious conversation about cash rents that are in line with the market environment we're in today," Gunderson says.

• EQUIPMENT UPGRADES

"If you're buying new equipment every year, there may be an opportunity to pare down on those purchases, especially if your fleet is appropriately sized for the scale of the operation," he advises.

• ASK YOUR AGRONOMIST

Gunderson's third step is to talk to the experts who know your operation well.

"There's going to be a combination of seeds, fertilizer and chemicals that will influence the productivity of that crop on that particular farm and its soil," he says.

At the same time, Tony Jesina, senior vice president of insurance for Farm Credit Services of America, warns against scaling back on risk management this year.

—Cheyenne Kramer

TAX INCREASES COULD IMPACT FARMERS

Every year the president sends a budget proposal to Congress for consideration.

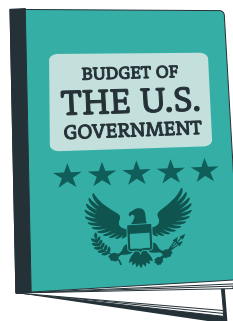
The section dealing with how to pay for the budget is called the Green Book, explains Paul Neiffer, The Farm CPA.

Neiffer says the Biden administration is proposing substantial tax increases that, if passed, would impact many farmers.

Six of the key points he highlights are:

1. Imposing a capital gains tax on transfers, either during life or at death. Neiffer says there would be a \$5 million exemption (\$10 million for couples with portability). Farmers could defer the tax until it is no longer farmed in the family, but interest would be due and payable over 15 years.

2. The Excess Business Loss (EBL) would become permanent, and the carry-



over would no longer be part of the net operating loss (NOL), but it would be subject to the EBL rules. Essentially the maximum NOL deduction in any year would be \$500,000 (indexed), Neiffer says.

3. Section 1031 gain deferral would be limited to \$500,000 (\$1 million for couples) in a year.

4. Capital gains on amounts over \$1 million would be taxed at 37% to 39.6%.

5. The maximum Net Investment Income Tax (NIIT) rate would bump to 5%.

6. Section 2032A would increase from \$1.3 million to \$14 million and be indexed to inflation, letting farmers value their land at its rental value instead of current fair market value. —Rhonda Brooks

On-Farm Accounting Delivers Visibility

THE TEAM AT TRACTION AG is working to provide a system that captures the financial and field information farmers manage.

"Historically, accounting has been a rearview mirror look at a business," says CEO Dustin Sapp. "Our goal is to provide the foundational system that empowers growers to make quick decisions about their operations — it's about real-time visibility."

Traction Ag is a cloud-based accounting system built for agriculture.

"We start with accounting — not historical financial health, and not just what you need to file taxes — to understand numbers and how to help make decisions for field level prosperity as well as make changes over time," he says.


Sapp says the current farm economy is ripe for farmers using financial resources to maximize their business.

"What doesn't get measured doesn't get done," he says. "When

you're in a posture of prosperity, it's easy to not pay attention to the details. You can choose to spend where you normally wouldn't, and when things are tighter, you pay more attention."

Traction Ag has integrations with Climate FieldView and the John Deere Operations Center. Sapp says this will help users maintain inventory balances for crops and inputs, and track costs of production and field level profitability.

—Margy Eckelkamp



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MACROECONOMIC IMPACT ON AG

MY MONTHLY COLUMNS in the past 15 months began with what a “black swan” event would look like for corn and later a reset(s) of ag prices that has evolved into my worst concern: producing too much of everything and potentially having an oversupply for more years.

An analysis of the equities, housing and commodities chart leads to the conclusion things are out of whack. The reset the Federal Reserve desires is not complete. Achieving the slow growth and low inflation of the 20 years before 2020 may have unintended consequences.

- **The NASDAQ (equities) market** is at an all-time high.
- **The housing market** is thriving despite inflation, labor shortages and unaffordability.
- **The inflation fight** with high comparative interest rates isn't solved yet.
- **A recessionary “soft landing”** doesn't seem to be in the cards.
- **The high cost of labor** has replaced supply shortages and energy costs as a concern.



Farmer Jerry Gulke is president of Gulke Group, a market advisory firm offering daily advice and low-cost order execution. He is currently offering a 30-day trial of daily marketing comments with voice alerts. Sign up using the contact information below.

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- **Even wars** on multiple fronts are being ignored by economists' confused outlooks.

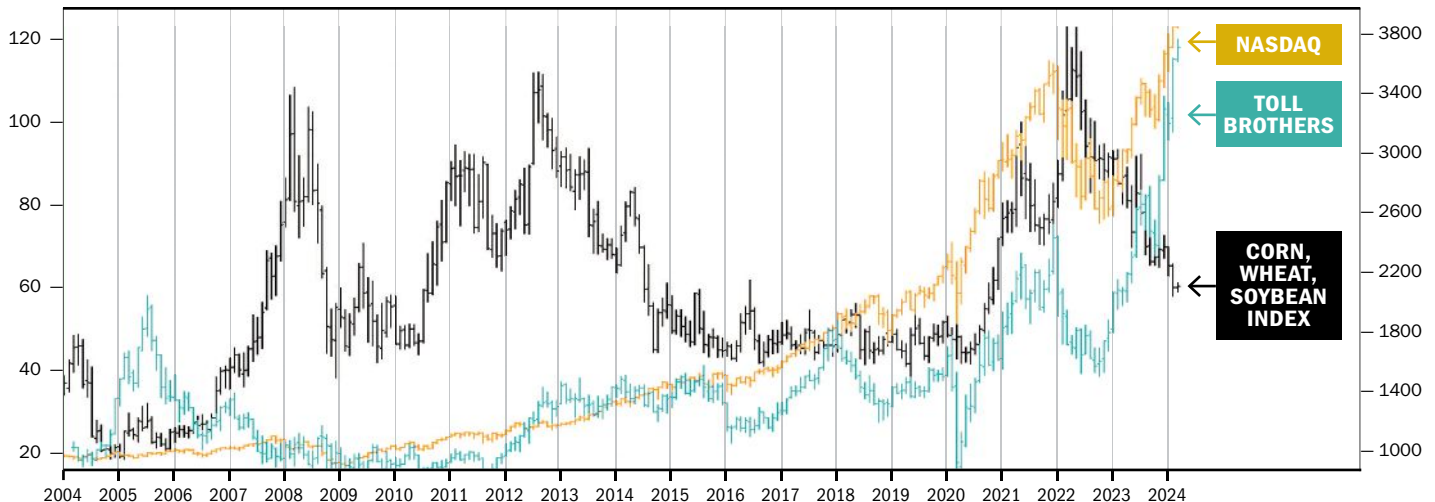
I don't recall in my lifetime when the general economy and agriculture were both in recession, apart from the 1930s. One seemed to help offset the other. Yet today, ag is in the pits in just one short year, with a non-farm economy seemingly overheated and unresponsive to actions to correct.

The last farm recession was in the early 1980s when interest rates were double what they are today, however the costs of servicing higher debt makes today comparable.

Anyone in their forties or younger likely hasn't had to deal with today's circumstances. I experienced the worst ag recession of my lifetime in the post-Vietnam War era as my parents witnessed the second of theirs. They were well prepared and saw cash would be king, and debt was truly a four-letter word. I learned from the hard knocks of others.

We are at an inflection point between a pause that gives a refresher or an education for the millennials. I have three concerns. >

Historical Comparison of Equity, Housing and Commodity Markets



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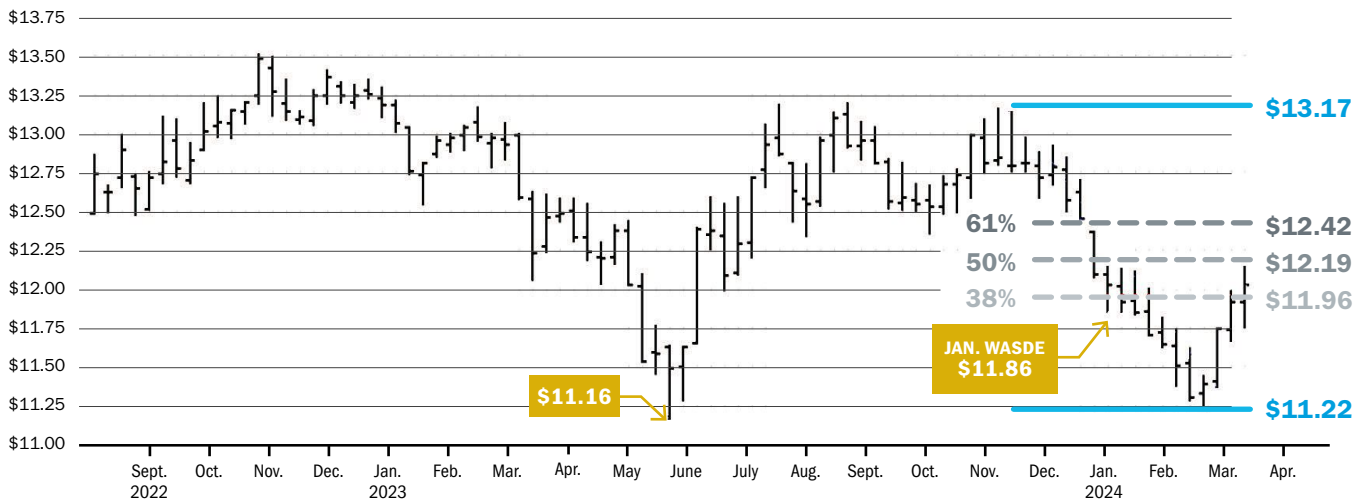
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November 2024 Soybean Prices



1. **The “tigers” of today**, might not have learned from history.
2. **Those influencing our government** and the Federal Reserve might still believe we have to hurt the middle class and the economically disadvantaged (higher unemployment) in order to save us all, repeating history.
3. **The U.S., and globally for that matter, could experience a black swan event** where both ag and non-ag are in recession, disinflation or stagnation — a discussion not on the minds of economists.

I recently studied the 1930s stock market and learned a partial conclusion of why economists failed to see the crash coming was because the plight of the middle and lower class citizens had gone unnoticed until it was too late.

A CLOSER LOOK

To get a semblance of a neutral bias to the first chart, the non-equity markets need to retrace, commodities need to rally, or some of both. The main influence on grains is supply versus demand. Without enough supply, prices will rally until price rations demand. If there is too much supply, prices fall to discover new demand or curtail production. A 6-million-acre reduction in corn to soybeans is not possible without weather or an outside force in the marketplace. Here's what influenced me to lift all price hedges in late February:

In early March, soybean prices closed higher than the previous week for the first time since they began dropping in November 2023. Corn and soybeans both have potential for a monthly reversal high.

- **November soybean prices** signaled the January WASDE report could've lowered demand as prices were lower to start the year.

- **The January WASDE report** validated the down gap — ending the day at \$11.86 versus \$12.70 at the end of 2023.

- **The February WASDE** added insult to injury by going to a low of about \$11.22.

- **Subsequently, the March WASDE** was viewed as a ho-hum of a report.

- **A late surge extended gains** right into the all important March 29 stocks and acreage report.

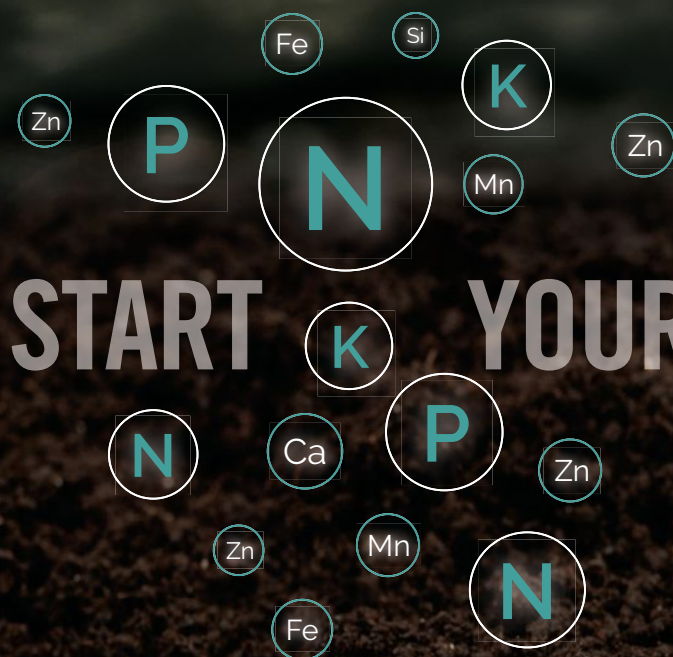
The chart above shows the first weekly close in early March above the previous week's range since November 2023. As of press time, both new crop corn and soybeans could post a monthly reversal high.

The March USDA acreage report could be a game-changer. Brazil's crops and U.S. acreage intentions are at the forefront, and it's too late for crop insurance to influence the price incentive to plant soybeans.

February's \$12 high is a 38% retracement of the \$2 move lower since November and has already been reached, leaving a retest of the \$12.45 gap left to buy acres if needed.

If price discovery and price charts are hard to understand, turn the price chart upside down and decide if you'd want to own it. I've used this for years to benefit my bias. **TP**

“An analysis of the market chart leads to the conclusion that things are out of whack.”



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HARD FALL OR SOFT LANDING?

The pendulum swings in agriculture for 2024 and beyond

By Tyne Morgan

THE AG ECONOMISTS' MONTHLY MONITOR SURVEY,

a joint effort between Farm Journal and agricultural policy research centers at the University of Missouri, launched in mid-2023. Questions are sent to nearly 70 agricultural economists nationwide to gauge perspectives on important drivers of agriculture and provide unique, timely insights that affect stakeholders at all levels of the industry.

"The Agricultural Economists' Monthly Monitor serves as a bridge between agricultural economists and those looking to better understand key concerns in the agricultural economy," says Pat Westhoff, director of FAPRI-MU. "Economists can share their thoughts on agricultural markets and

current events without being 'on the record,' and stakeholders can use these insights and perspectives to make sense of projections and current issues in agricultural markets."

Participants in the Monthly Monitor survey were carefully selected to represent both academic and industry perspectives from across the U.S. The first of its kind, the survey harvests perspectives from individuals with expertise in crops, livestock, policy and agricultural finance. The economists provide insights into agricultural economic health and views on market trends through crop

and livestock production forecasts, farm income expectations as well as pre-USDA report estimates. The survey is anonymous, a key factor that makes this tool so valuable.



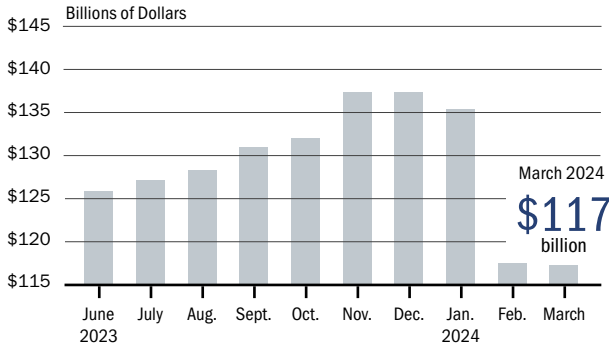
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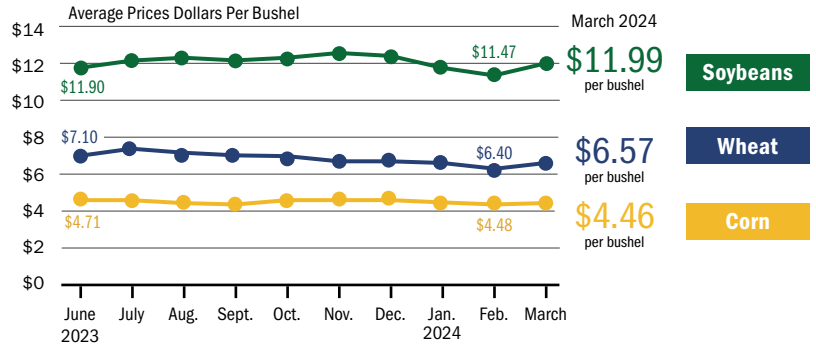


MORE DATA

U.S. NET FARM INCOME



CROP PRICE PROJECTIONS



Reset In Agriculture

A reset in agriculture seems to be underway. For 10 straight months, the Ag Economists' Monthly Monitor has tracked the health of the ag economy through the lens of ag economists.

In March, economists' views on the ag economy have grown weaker, but it's the erosion in the future outlook sprouting fresh concerns.

"We just have to continue to watch the downside," says Scott Brown, interim director of Rural and Farm Finance Policy Analysis Center (RaFF) at the University of Missouri, who also helps author the Ag Economists' Monthly Monitor. "It's certainly more negative as we look ahead, but if we plant a lot of corn and we get trend yields, I think I know the directional corn prices, and it's perhaps even lower than where the economists have been today."

Economists' views on the net farm income picture took a nosedive in February but held steady in March around \$117 billion. The projection is a sharp drop from the \$160 billion USDA forecast for 2023, and a 42% fall from the record set in 2022.

"We think farm income does drop very sharply in 2024, but it's just back down to the levels we saw in 2020 and remains above the levels we saw between 2015 and 2019," says Pat Westhoff, director of the Food and Policy Research Institute (FAPRI) at the University of Missouri.

Fallout From Falling Net Farm Income

The anonymous survey exposed possible outcomes from a sharp drop in net farm income. One economist pointed out for those producers who thought 2021/22 was a new normal for commodity prices, they might be overextended heading into the latest downturn. Another economist said corn farmers could face the steepest losses this year.

"It looks like corn prices will be below production costs for many producers. We have not had that for a long time, especially since the ethanol boom started almost 20 years ago. The struggles this time will

be for corn farmers. Producers of other crops like cotton, wheat and rice have had difficult years," one economist says.

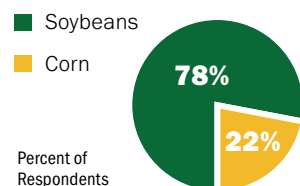
"Low row crop prices will depress farm incomes in the Midwest in 2024. In 12 months, it will be interesting to see how much working capital erosion has taken place, and how serious of a problem that becomes," another economist says.

Forecasts show margins will continue to get squeezed. The exact fallout is a debate that will continue to play out in 2024.

"I'm still in the soft-landing side of things, but I want folks to do enough risk management to hopefully prevent the hard fall," Brown says.

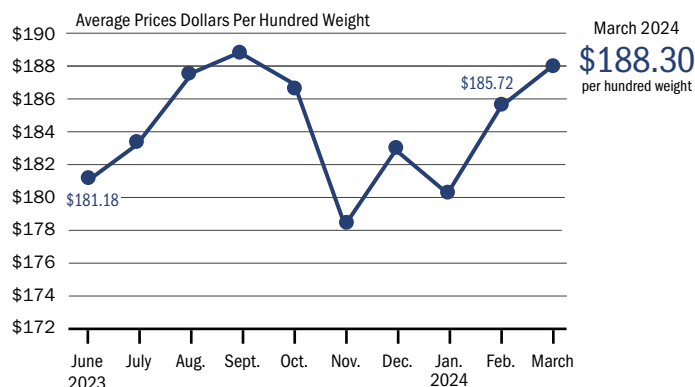
"If things play out the way we have them currently projected, it's a relatively soft landing," Westhoff adds, "That's in the sense it's not a continued crash, where we see a repeat of some of the horrible times you've had in the past, but the risks are there. I could easily tell you stories much more negative, and the opposite is also true that we can have a better picture as well."

Which commodity pencils the best return potential in 2024?





CATTLE PRICE PROJECTIONS



Cow-Calf Producers In The Driver's Seat

While the doom and gloom forecasts haunt row crops in 2024, the Ag Economists' Monthly Monitor continues to highlight the one bright spot in the ag economy this year.

"The outlier for me is cattle," Brown says. "I think cattle prices, frankly, could get even higher. Whether that's good in the long run for us, in terms of some pieces of the industry that we need, like processing capacity, we'll have to wait and see, but cow-calf producers are going to be in the driver's seat for the next year and a half to two years."

The March Monthly Monitor asked economists what two factors will drive agriculture's economic health today and in the next 12 months.

They say declining prices for many commodities, with a mixed impact of higher cattle and hog prices; higher production costs, including inputs, interest rates and land rents; as well as concerns about global economic growth and regulatory uncertainty.

For row crops, economists say supply is the overriding factor for grains in the next six months.

"If we have an average crop in 2024, we'll be looking at lower prices for most of the major commodities as the most likely outcome. So that tends to push down not just farm receipts, but also net farm income this year as production costs remain relatively high overall," Westhoff says.

On the livestock side, the supply of cattle is known and is

creating mounting pressure toward higher prices with the fewest cows since 1961 and tightening supplies of beef and cattle. The biggest wild card, however, is demand.

"Will consumers continue to buy at their current rate that they did last year, with higher prices, because we've got record high retail beef prices? That's the real interesting part there," says David Anderson, a livestock economist with Texas A&M University and one of the 70 economists surveyed each month.

"From a live animal standpoint, cheaper grain leads to cheaper feed costs that boost prices. That's one part of it, certainly tighter supplies and the demand for those cattle from packing plants that now are having to fight for animals. That's part of boosting prices, too, as well as that consumer demand at every step of the chain, so to speak."

Just how much higher can cattle prices go? This month's monthly monitor jumped another \$3 per cwt to \$188.30.

Anderson believes it could be 2028

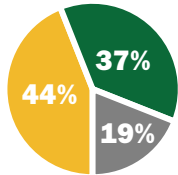
or even 2029 before we start rapidly expanding beef supplies, a sign elevated cattle prices could be in for a long ride if demand can hold.

"Let's say a calf born this spring is held back into the herd, she's not going to have her first calf for two years. It's another 18 months before the animal is at its finished weight and becomes beef. That's almost four years of higher prices, if we started aggressively expanding today," Anderson explains.

"We'll be looking at lower prices for most of the major commodities as the most likely outcome."

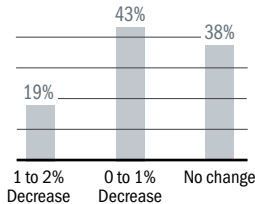
INTEREST RATES

Are you more optimistic or pessimistic about interest rate cuts in 2024?



■ Pessimistic
■ Optimistic
■ Unsure

How will the Federal Reserve change current interest rates?



Digging Into Demand

The strength in demand hinges on the health of the U.S. economy.

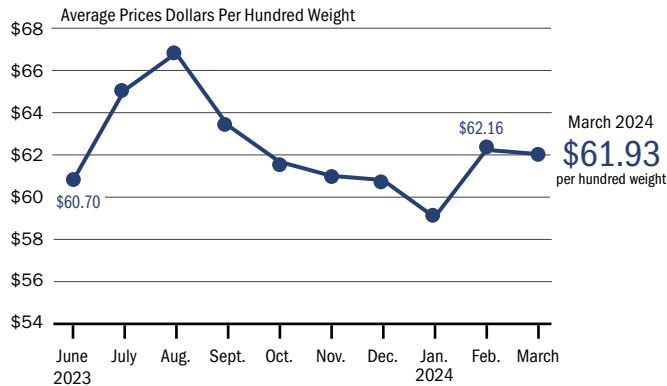
Anderson thinks while there are mixed signals with the economy, fundamentally, the signals are working in favor of beef and meat demand.

"We have a growing economy: GDP is growing, real incomes and real wages are growing. What that means is incomes are growing faster than inflation. We also have very low unemployment," Anderson says. "If we think about a growing economy and low unemployment, historically, those are very good for the economic outlook for beef demand."

"I don't think we're yet seeing a lot of indications of weakness in demand just yet," Brown says. "It's the one I watch the most as inflation is still not back to the Federal Reserve's target of 2%."

In the latest monitor, economists cast doubt on not only if the Federal Reserve will make interest rate cuts in 2024, but by how much. Of those surveyed, 44% said they are growing more pessimistic about rate cuts in 2024 while 37% are more optimistic. The majority are forecasting rates to fall zero to 1% this year.

HOG PRICE PROJECTIONS



Turbulent Times For Pork

Hog producers are coping with a plethora of challenges. 2023 produced the worst margins on record. Now, consolidation concerns are setting in as closures of pork processing plants have economists expecting more on the way.

Brown points to an improving profit picture for hog producers in 2024 with lower feed costs to help on the productivity side. However, even if this year is a break-even year for producers, economists warn it might help stop the bleeding but won't be enough to help producers dig out of the hole created last year.

"It's not enough to recover from all of that, because those were black record large losses," Anderson says. "One of the interesting things on the hog side is, why don't we see a lot more cutback in production already because of those losses? We don't really see that, but some of its productivity gains are offsetting fewer sales. It's a pretty interesting industry to look at."

Clarity On China

China continues to be a major question mark for grain and meat demand.

The country recently announced it will sharply expand its budget to stockpile grains and edible oils to help improve food security; however, not all economists are sold on that motive. The Monthly Monitor asked economists if they think there are other motives at play.

"Yes, helping internal prices for farmers," one economist said.

"No, I actually do think China likes holding large stockpiles of feed grains. Now that grain prices have fallen, they are taking advantage of low prices to build stocks," another economist responded.

"China is preparing for the possibility of increased conflict with the United States after changing the wording contained in its policy paper regarding Taiwan," another economist said in the anonymous survey. **TP**

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Farm life is unpredictable, and so are the challenges you face. ATV/UTV insurance goes beyond accidents, offering comprehensive coverage against theft, vandalism, hitting an animal, fire, and some weather-related damage. Whether it's protecting your ATV/UTV from theft during the off-season or damage caused by unforeseen events, insurance can provide comprehensive coverage to keep you covered in many situations.

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In the unfortunate event that your ATV/UTV causes damage to someone else's property or results in an injury, liability coverage protects you financially in case you're held responsible for injuries or damages to others while riding. This ensures that you can focus on your farming activities without the stress of legal liabilities.

Peace of mind for every season

Farming is a year-round endeavor, and your ATV/UTV plays a crucial role in every season. Whether it's plowing through snow in winter or navigating muddy fields in spring, knowing that your ATV/UTV is protected allows you to concentrate on what matters most—your crops.

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7 MOST COMMON ERC CLAIM MISTAKES

THE IRS HAS ISSUED AN ALERT ON the most common mistakes farmers and other taxpayers make in filing an Employee Retention Credit (ERC) claim as follows:

1. TOO MANY QUARTERS BEING CLAIMED

If you are relying on a government shutdown, that likely only applied to one quarter. Many ERC promoters made the mistake of taking credit for all quarters.

2. GOVERNMENT ORDERS THAT DON'T QUALIFY

Many promoters claim any government order would automatically qualify you for the credit. However, the IRS shows there has to be a formal order in effect, and your operations must have been fully or partially suspended during that time. All farm operations were considered to be essential businesses during the pandemic, and we have never found any farm operation to be shut down. If you received an ERC based on your operation being shut down and you were not, be forewarned the IRS will likely find out and you will pay the tax back plus penalties and interest.



Paul Neiffer is a CPA who consults on all areas of farm taxes. He grew up on a farm in southeastern Washington and now owns farmland in Washington, Iowa and Missouri.

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BLOG AgWeb.com/farmcpa

3. TOO MANY EMPLOYEES AND WRONG CALCULATIONS

Many of these promoters simply took total wages and used that to claim the credit.

4. BUSINESS CITING SUPPLY CHAIN ISSUES

Almost no farmer could assert this because their supplier was not shut down. You might have experienced delays in receiving your inputs, but this does not qualify you for the ERC claim.

5. BUSINESS CLAIMING ERC FOR TOO MUCH OF A TAX PERIOD

If your gross receipts did not decline enough in the quarter and you are relying on a government order shutting you down, the only wages that qualify for the credit are wages you actually paid during the shutdown. The remaining wages do not qualify.

6. BUSINESS DIDN'T PAY WAGES OR DIDN'T EXIST DURING THE ELIGIBILITY PERIOD

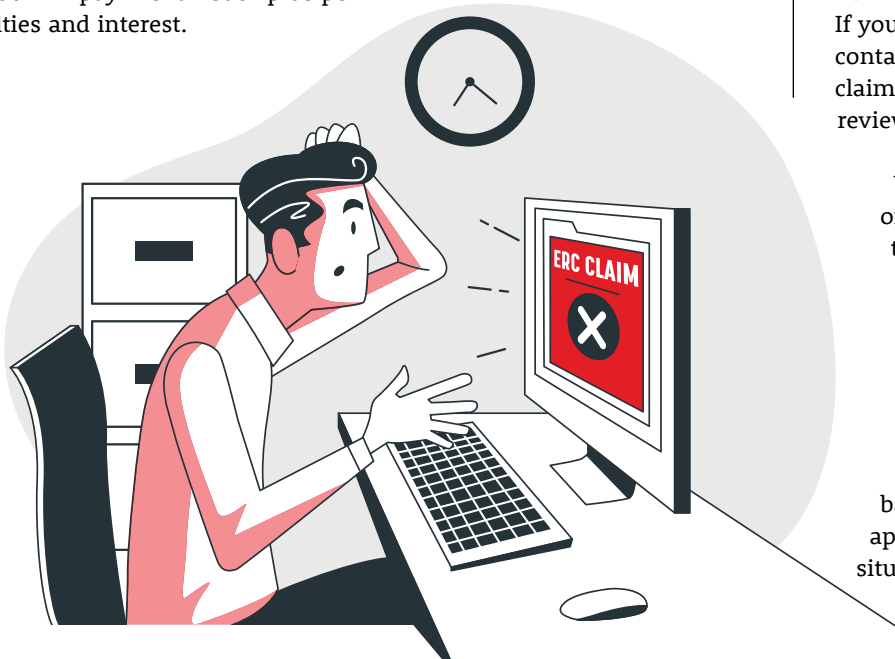
This is obvious.

7. PROMOTER SAYS THERE'S NOTHING TO LOSE

If your claim was processed by a promoter contacting you via phone, mail or email, your claim is likely not accurate and you need to review it with your tax adviser.

We normally do not agree with the IRS on much of anything, but when it comes to the ERC, we fully support the IRS on trying to eliminate the abuses that have been caused by these promoters. Most of it is the fault of Congress for creating a tax credit that can lead to fraud, but now we have to clean up the mess and it could cost you money.

The IRS does have a process for paying back any ineligible ERC claims. If this applies to you, make sure to review your situation with your tax adviser. **TP**



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BALANCING ACT

HOW DO YOU MANAGE EQUIPMENT DEBT, TRANSITION AND AN ECONOMIC DOWNTURN?

Time does not slow down, and transition and change happen whether we are ready for them or not. There are five key areas to focus on in this scenario.

1. KNOW YOUR DEBT REPAYMENT CAPACITY.

Many operations with higher equipment debt have a good base of owned land and lower land costs. This can create highly profitable crop production but makes equipment debt a glaring black eye. Understand your budget projections, cash flow needs and ability to repay short-term debt.

2. HAVE A CAPITAL EXPENDITURE PLAN IN PLACE.

You know what doesn't help equipment debt? More debt. If you don't have a clear plan for debt repayment and your future purchases, you might have a delay in transition or longer repayment with lower profitability. Map each piece of equipment and your plan for trades or upgrades either in the next five years or through transition.

3. YOU CAN'T GIFT DEBT.

But you can change the name of the lessee on most notes within family operations. Moving from a single owner to multi-owner entity the initial borrower is a member of is also possible and fairly common. Consider a structure that fits the senior generation's tax implications and the junior generation's ability to take on liabilities and equipment replacement.

4. BE PREPARED FOR DEPRECIATION.

In 2015, we saw massive depreciation on equipment following a softening market and plunging prices. Consider how this will affect your net equity, asset valuation, replacement plan and expectations for the next generation valuing and buying equipment.



Shay Foulk is a farm business consultant with Ag View Solutions, providing profit management and business analysis. He farms and runs a regional seed business with his wife and father-in-law in Illinois.

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[@FoulkShay](https://twitter.com/FoulkShay)

5. UNDERSTAND YOUR NET EQUITY POSITION.

Net equity is simply assets minus liabilities. An operation with \$2 million in equipment and \$500,000 in debt has a net equity position of \$1.5 million. This is the amount everyone involved should understand for transition, growth, equipment rates and debt repayment.

Here are a few additional considerations for your operation's transition:

- **Valuations are going to change rapidly at some point.** Be realistic. Market valuation shouldn't be what's on auction sites. It should be what the machine is actually worth and what someone will write a check for. It should also be an agreement between transitioning parties based on appraisals.

- **Don't ask the next generation to buy equipment for more than it's worth.** If you love iron, take a supplement by mouth once daily. Don't treat the next generation unfairly just because you think it's worth more.

- **Equipment isn't a retirement strategy.** It's becoming a small piece of the puzzle. Values are high, depreciation is like a wrecking ball and production is catching up. Operators get

their feelings hurt when they get valuations back. You can be happy or you can be informed, but not always both. Know the numbers and their implications on your business. **TP**

Scan for more
on equipment
analysis and
transition.



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Top Producer SUMMIT KANSAS CITY

2024 HIGHLIGHTS

The annual Top Producer Summit brought together the country's leading farm managers for three days of networking, education and award programming.

The Explorer's Spirit

By Margy Eckelkamp

VANESSA O'BRIEN IS A RECORD-SETTING EXPLORER. She is the first woman to reach extremes on land, sea and air. After two decades in business, she turned her sights on exploration, completing the Explorers' Extreme Trifecta in 3,729 days.

"Farmers don't farm because it's easy, just like explorers don't explore because it's easy," O'Brien says.

From her expeditions to the summit of Mount Everest, to the bottom of the deepest part of the ocean at 35,872' in the Mariana Trench in a submersible, to passing the Kármán Line into outer space on Blue Origin's NS-22 mission, O'Brien sums up her three key takeaways:

- **You must lead.**
- **Decision-making is critical.**
- **Underscore teams with a denominator: simple communications and common sense.**



Vanessa O'Brien

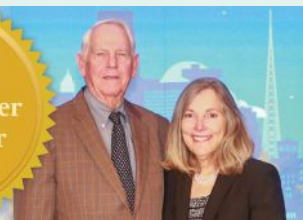
"When the pace of change is exponential, we have to be agile and adapt," she says, adding that the secret sauce is grit.

"Grit is maintaining long-term momentum despite adversity or failure," she says. "And because explorers and farmers have grit, they persevere despite failure and setbacks."

5 COMPONENTS OF AN EXPLORER'S MENTALITY

- **Courage:** Knowing the risk and still willing to go.
- **Resilience:** A powerful combination of optimism, confidence and creativity.
- **Endurance:** Any clever person can pull something off in the short term. Add an element of time, however, and intensity and direction become necessary.
- **Excellence:** Is a continuum not an endgame. It allows failure and seeks continuous improvement.
- **Conscientiousness:** Doing what one believes is right or for a higher purpose can be a super power. **TP**

Award-Winning Farmers



TOP PRODUCER OF THE YEAR

Christine Hamilton, co-owner of Christiansen Land and Cattle in S.D.



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PJ Haynie farms land in Arkansas and Virginia, part of which has been in his family since 1867.



FINALIST

Kelly Garrett raises crops and cattle in western Iowa with his family.

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5 TRENDS TO WATCH In The Input Market

By Cheyenne Kramer

AS FERTILIZER PRICES go through a seasonal spring elevation, experts are watching global dynamics to understand the market's longer-term outlook in the U.S.

Among their top concerns are geopolitics, weather and low supply.

Pipelines in Russia

When Russia began invading Ukraine, their production of anhydrous plummeted.

Sam Taylor, farm inputs analyst at Rabobank, says the high prices that followed aren't expected to make another appearance.

"We saw the worst of the market come and go," he says. "Farmers can feel reasonably comfortable investing in these fertilizers."

Josh Linville, vice president of fertilizer at StoneX, says prices could drop as Russia works on two new pipelines; however, they could also be a potential target for Ukraine.

"The world's largest exporter could pop up and start exporting again. Or, maybe they don't," Linville says.

China's Unpredictability

China, a major nitrogen exporter, has placed new restrictions that could mean 40% less exports from the country.

"Right now, we're going with the idea that the Chinese are going to restrict exports," Linville says. "That will keep prices a bit elevated."

Taylor says while tight supply might be in the near term, the longer outlook could be more positive.

"We anticipate the bulk of the exports from the Chinese market are likely to come in the second half of this year, which ultimately means a semblance of tightness in the North American market and also the global markets for the first half," Taylor says. "There is room for optimism in the second half of this year as we look forward into 2025 to potentially see some downward pricing dynamics."



The Weather Forecast

Water levels continue to be top of mind.

"The Mississippi River is an artery for our transit. If it suffers, we suffer," Linville says.

He adds that while the Mississippi is in good shape for now, the Northern Plains have the potential to slow down the water flow due to the below-average level of snowfall they've received this year.

The Israel/Hamas Conflict

Israel and Hamas could also impact the market, though Israel isn't necessarily an area heavy in fertilizer production.

"This is one misstep away from the entire Middle East region jumping into the mix," Linville says. "Sometimes the indirect impacts can have a foothold in the marketplace."

Linville says the Middle East accounts for 51% of global urea exports and even a small reduction in supply could cause a scare and make prices jump.

Large Fall Applications

U.S. fertilizer applications from fall 2023 are also expected have a lasting effect on spring supply, and according to Linville, the short time between fall and spring applications makes it difficult to restock inventory.

"When we look at anhydrous, it was the third best application we've seen since 2000. Inventories have been drawn down very low," he says.

Until inventory is rebuilt, elevated spring prices for anhydrous, phosphate and potash can be expected.

Taylor adds tightness in the input market isn't quick to correct itself, but next year could bring more availability.

"The current environment still incentivizes imports into the North American market," he says. "There should be room for inventory to build up into 2025." **TP**



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WHAT DOES THE FUTURE HOLD?

During a panel moderated by Top Producer editor Margy Eckelkamp, tech leaders from across the industry gave perspective **on what artificial intelligence will mean for agriculture.**



Connie Bowen, *Farmhand Ventures*

"We have an opportunity to leverage autonomy to make ag bigger and more welcoming. Automation frees up people, and it frees up resources that you can devote elsewhere. AI enables tools to make farming easier. For example, think about the next generation of ag equipment that pulls reliable telemetric data. These useful products can pull in high quality data in large quantities, enabling us to generate the required quantities of data to get into the next generation of precision ag."

Jake Joraanstad, *Bushel*

"If AI is a nine-inning ballgame, we're not even at the first hit in the first inning yet. We in the tech space, we need your (farmers') engagement in ag tech. There are a lot of products out there in ag tech that are, in my opinion, more solutions looking for a problem. Over the next 10 years, as the true problems start to become more obvious, we are going to need farmers who are more engaged with tech development."

Steve Cubbage, *Longitude 94*

"The data layer foundation started in 1992 with the yield map, and that's still the kingpin of data — your report card of actions and decisions made throughout the year. Yield data still needs ground truthed, and we need to feed that to the AI side. Satellite imagery needs ground truthed yield data to back it up. General Mills will assume you have three years of data all digitized and ready to go, but we're seeing there is still education needed at the farm level of what data you need to collect and how to collect it and what format, etc."

Megan Fallon, *Mineral*

"Agriculture is a data-intensive domain, making it a perfectly primed landscape for the power and scalability of AI. But it goes beyond being a magical 'silver bullet' that solves crucial challenges farmers face in their fields today. It's about finally having a way to bring together all of these constantly changing, complex variables and interactions occurring throughout the food production system, and using this AI-plus-data relationship with human expertise to improve decision-making and support climate adaptability."



TPS 2024 Night Out

On the last night of Top Producer Summit, attendees made their way to the Kansas City Power and Light District for a night out at PBR Bar. The evening featured live music and an open bar, which was sponsored by NewLeaf Symbiotics. **TP**

A Conference for Christmas

By Cheyenne Kramer

MOST OF US HAVE AT LEAST ONE PERSON

we struggle to buy gifts for, but the next time you find yourself wracking your brain for something meaningful they would enjoy, remember the Frasier family has an idea for you.

Joe and Cindy Frasier own and operate River Bend Ranch and Solid Rock Red Angus in Limon, Colo. They recently began thinking about what succession looks like for them.

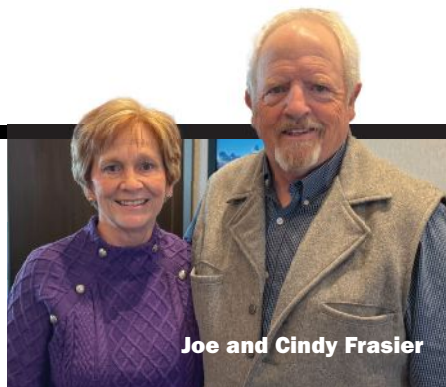
"We have three children. Two of them are on the ranch now, and our daughter has cattle here and some ownership, but she lives off the ranch. So, it creates a bit of a unique situation," Cindy says.

Knowing their parents wanted to learn more about what their next steps should be but maybe needed a nudge to get started, the three Frasier siblings took action.

"We were wanting to get more ideas on how to do the transition, and our children decided they wanted to help us," Cindy says. "So, they gifted us this conference for Christmas."

The Frasiers joined the preconference workshop at the 2024 Top Producer Summit facilitated by Rena Striegel, president, Transition Point Business Advisors. This is part of The DIRT Project, which helps jump-start succession planning for operations.

The present was perfect in more ways than one. The Frasiers could



Joe and Cindy Frasier

make the eight-hour drive to visit their daughter who lives in Olathe, Kan., and then spend an entire day learning the ins and outs of succession planning while enjoying the rest of Top Producer Summit's programming — where Joe shares he was looking forward to meeting new people and sharing ideas.

The next time you're looking for a gift to give a farmer or rancher in your life, remember the next Top Producer Summit is scheduled for Feb. 17-19, 2025 at the Loews Hotel in Kansas City. **TP**

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IS YOUR SOIL BALANCED FOR INCREASED NUTRIENT UPTAKE?

As the growing season gears up, jump-start crop growth by making nutrients as available as possible. Look beyond only soil test results, and make sure your soil pH is balanced now for the best chance of growth at the beginning and throughout the season.

After all, phosphorus is essential for plant growth from root development through maturity:

- **Early in the season**, P promotes root development and early seedling growth.
- **Throughout the season**, it stimulates root development and improves flower formation, seed maturation and grain fill.

To set up your soil for nutrient uptake, the specific pH range for optimum plant growth varies among crops, but generally falls within the 5.5-7.5 range. Several factors influence soil pH, including:

- Rainfall
- Fertilizers
- Crops
- Subsoil acidity
- Liming

Consider a study from the University of Minnesota reported in 2014 that found as pH increased, both soybean yield and P and zinc availability decreased. The study concluded that recommendations for P and Zn should not be based on soil test levels alone, but should also be adjusted for soil pH.

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This shows the need for a high-performance fertilizer application to address the P and Zn deficiencies prevalent in high-pH soils, even if soil test levels suggest adequate availability.

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THINK INSIDE THE BOX

By Cheyenne Kramer

IN A YEAR PREDICTED TO BRING TIGHTER MARGINS ON THE FARM, many operations will need to get creative when balancing inputs and income.

But Kyle Scheele, a motivational author, speaker and artist, says this doesn't necessarily mean thinking outside the box, but instead thinking within the constraints you're given.

During a keynote presentation, Scheele shared constraints can actually be a good thing on the farm because they:

1. FACILITATE FOCUS

A lack of resources helps you focus on what's most important to the operation's success and what actually needs done.

2. REQUIRE RESOURCEFULNESS

If you don't have the resources someone else does, Scheele says to ask yourself what else you could be doing to help solve the issue.

3. INSPIRE INNOVATION

Farmers are known for being innovative. Think about what you can do with what you already have. Do you have equipment that might not be



“Creativity isn’t limited to artists, sculptors and musicians. “Thinking inside the box is true creativity.” ~Kyle Scheele

intended to complete a certain task but could be adjusted to do it?

4. CREATE CONNECTION

Scheele says trying to make something relatable to everyone ends up making it relatable to no one. How do your constraints make your operation unique?

5. FOSTER COLLABORATION

Farmers are working toward a common goal through different methods. Share your challenges with others in the industry. Odds are they've experienced something similar, or know someone who has, and can offer new perspectives.

6. BUILD RESILIENCY AND STRENGTH

Tough times build tough people. Making the most of the years with

limited resources will help you do more when favorable margins return.

Scheele says the first step to working within your constraints is to figure out what boundaries and tools you have. Additionally, he recommends changing your perspective to think of any limitations as constructive rather than constrictive.

“Identify the boundaries and start looking for the gaps,” he says. “Pushing against the constraints helps you find the gaps as well as the hidden solutions.”

Thinking inside the box has the ability to yield hidden solutions for your farm and business.

“Creativity isn't limited to artists, sculptors and musicians,” Scheele shares. “Thinking inside the box is true creativity.” **TP**

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SPACE WEATHER AND YOUR FARM

By Matthew J. Grassi

IT'S A SIMPLE QUESTION, but one Terry Griffin, associate professor and cropping systems economist at Kansas State University, suspects many farmers would have a hard time answering “yes” to: Can you plant or harvest a crop without GPS?

Instances of space weather, or solar flare events in space, can cause GPS failures. It's also something Griffin says a lot of important, powerful and smart people in world government are concerned about.

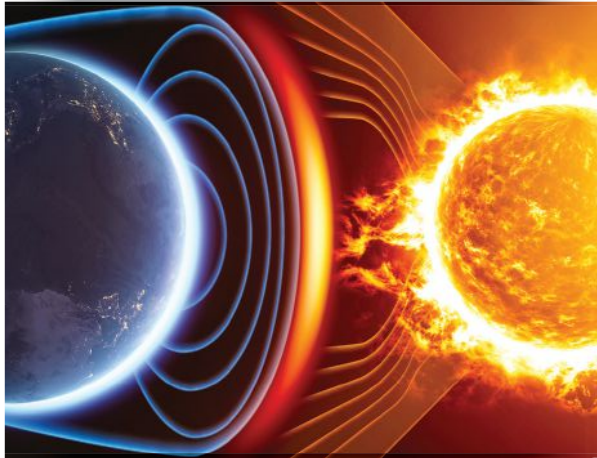
Such an event occurring in January is probably not a big deal to U.S. farmers as the vast majority aren't planting or harvesting during that time. But, what if one of these “atmospheric scintillations” were to occur during the spring or fall?

“With today's connected equipment, you can't plant without GPS lock, which requires getting connection with a minimum of four satellites, or the seeds won't drop,” he says. “So, the question becomes, do we wait it out? Or do we keep an old six-row ‘dumb planter’ with row markers for just these instances?”

HOW TO PREPARE

Griffin has been monitoring this situation from his lab in Manhattan, Kan., for some time now. He says this summer's Northern Lights event over North America was a geomagnetic storm that did have a negative effect on GPS signals.

And warnings abound from government agencies predicting such things (NOAA, NASA, etc.) and advis-



Space weather events have the potential to disrupt GPS and other satellite-based guidance signals in the near future.

event in space would result in a one-hour outage, but a more intense R4 would likely mean an entire week without GPS.

“That could get really tough if you're in the middle of planting or har-

vesting,” he admits, adding many sprayers also require GPS connection.

2. Don't blame your equipment dealer. It's likely not their fault, and they might not even be aware there is a regional outage. Instead, give your sales representative a quick call or text to see if there is an outage within their systems.

3. Check NOAA's Planetary K Index. (Scan the QR code.) You can even sign up for email alerts that will let you know if you happen to be in the midst of one of these space weather induced outages.

“Can you legislate (against) sunspots,” Griffin asks. “I mean, someone will try to, but that's probably not possible. What will we do when these events occur?” **TP**

ing the world should expect a widespread outage at some point during Solar Cycle 25 — which is the cycle we're in currently.

“We are approaching solar max in the next six months to a year,” Griffin says. “I am fully expecting to have GPS blackouts at some point soon at this latitude. Think about how we use GPS; the airline industry, for one, is paying a lot of attention to this, as they should be.”

Farmers could conceivably manage a widespread GPS outage by investing in a local RTK network. Griffin says RTK is great in that it is a set, earthly signal, and you can basically create your own positioning system with three or more ground stations. However, he admits it is an expensive backup plan.

Griffin has three recommendations for when a previously robust GPS signal proves suddenly suspect:

1. Don't panic. Instead, wait it out and be patient; most GPS outages are only temporary. Griffin says an R2



READ MORE

Scan the QR code to take a look at NOAA's Planetary K Index.

PIONEERING THE FUTURE OF ROCK PICKING.

In the ever-changing landscape of farming, one task has remained tedious and overlooked: rock picking. It's a job that farmers often dislike but can't ignore. Now, there is TerraClear, a company that's revolutionizing this aspect of agriculture. TerraClear isn't just changing how rocks are picked; it's transforming the entire process into an efficient, technologically-driven task, addressing one of the most hated jobs on the farm.

INNOVATIVE APPROACH TO ROCK MANAGEMENT

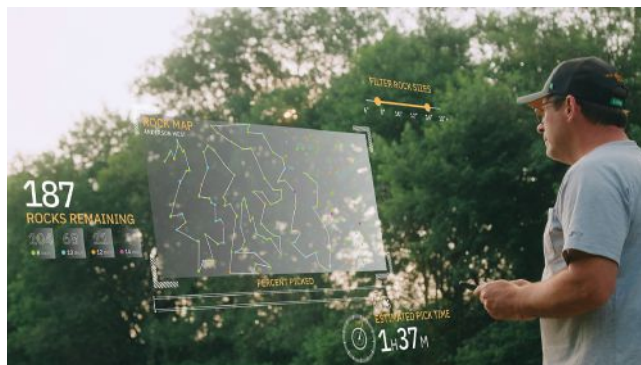
TerraClear introduces a groundbreaking Rock Picking service, the ultimate solution to outsource this grueling task. Through this service, farmers receive a detailed Rock Map, followed by expert rock picking using the TC80 Rock Picker. Thanks to the precision map, this method is not only faster, but more thorough than traditional methods.

ADVANCED MAPPING TECHNOLOGY

At the heart of TerraClear's service is their advanced mapping technology. Utilizing high resolution imagery processed through an AI system, TerraClear's approach significantly outperforms human rock detection. This AI model, trained on millions of rocks in various field conditions, even functions accurately in fields with substantial residue. In order to create these comprehensive rock maps, both drone-based and ground-based mapping platforms are used.

SHOWCASING SUCCESS

The effectiveness of TerraClear is demonstrated through numerous success stories in the Midwest. Kyle O'Brien, a farmer from Iowa, attests to the efficiency of TerraClear's approach: "TerraClear has significantly simplified rock picking for us.



An illustration of TerraClear's mapping system with dots marking rocks and lines showing the quickest route for collection.



TerraClear's TC80 Rock Picker clears up to 400 rocks per hour, handling rocks sized 4"-26" with ease.

"FARMERS USED TO PICK
UP ROCKS BY HAND,
BUT NOT THE MASSIVE
300-POUND ONES,
AND CERTAINLY NOT
**220 ACRES IN
JUST 3 HOURS.**"

- ZACH JOHNSON
MILLENNIAL FARMER

It's faster, allowing us to cover more acres per day." Similarly, Lance Lillibridge from Benton County, Iowa, shares his experience: "We were constantly seeking a better way to pick rocks. Before TerraClear, we'd spend excessive time just searching for rocks in our fields. Discovering TerraClear marked a turning point in how we handle rock picking."

Adding to these endorsements, the YouTube Millennial Farmer, Zach Johnson, praised TerraClear's method on Instagram. He pointed out the stark difference between traditional and modern methods: "Farmers used to pick up rocks by hand, but not the massive 300-pound ones, and certainly not 220 acres in just 3 hours." This observation highlights the efficiency of TerraClear's method.

MORE THAN CONVENIENCE

It's not just about making rock picking less of a hassle. TerraClear's approach represents a shift towards smart, efficient farming practices. The Rock Map aids in picking, but with the complete service, farmers are relieved of dealing with rock removal altogether. The rock picking process can be simple: order the service and TerraClear handles the rest.

TerraClear is more than a rock-picking service; it's a symbol of the future of agriculture, where efficiency, tech, and smart solutions come together to solve long standing problems.

Let TerraClear's service providers take care of the rock picking on your acres. Schedule now at www.terraclear.com to meet your tight picking window this spring. Your kids will thank you.

THE UNTOLD FARMER

By Margy Eckelkamp

AS A FARMER AND GLOBAL PHILANTHROPIST,

Howard Buffett and his namesake, The Howard G. Buffett Foundation, work where others can't or won't to address food insecurity, mitigate conflict, combat human trafficking and improve public safety.

After 10 trips to the front line in Ukraine (the first of which was April of 2022), Buffett shared key insights and takeaways to the attendees at the 2024 Top Producer Summit.

As Ukrainians are living day-by-day and the country's farmers face instability in inputs, destruction of their infrastructure and the threat of landmines scattered in their fields, Buffett encourages U.S. farmers to see the threat to global food security and view this conflict through the eyes of a farmer.



Q: How do you describe your experience in Ukraine?

A: "It's hard to imagine the amount of destruction. Many farmers lost everything they've had. Think about if you were to go home today and your machinery shed is completely shelled, all your equipment is burned, and you don't know when you're going to be able to go back in the field because there are hundreds of landmines."

Q: How has the timing of this war affected global food security?

A: "If we didn't have the largest corn crop we've ever harvested, a five-year high carryover in corn and a four-year high carryover in soybeans, and if South America didn't have strong yields, the impact of Ukraine would be so much greater than it has been. The timing is such that we've avoided a serious crisis around the world with food insecurity so far, but that doesn't mean it will stay that way."

Farmer and philanthropist Howard Buffett held a fireside chat during the 2024 Top Producer Summit with Farm Journal president Charlene Finck to share his experiences visiting the front line of Ukraine over the past two years.

"There are still farmers dying every week because of land mines."

Q: How have you seen the support from the U.S. government show up in Ukraine?

A: "We have spent a majority of the money for Ukraine in this country in 31 states, 71 cities and 130 some production lines. We're emptying out warehouses of ammunition that if we went to war with, we'd be surprised or disappointed with, and we'd be in trouble. I've been in a howitzer site, where 40% of the 155 shells firing came from the U.S. misfire, either because the ammunition is old or the electronics are corroded. We're also replacing very old weapons systems with higher tech weapons systems, so we as the U.S. will be better prepared to fight if we have to fight."

Q: How is the way this war is being fought different?

A: "Drones are the most important thing right now in this war. Ukraine is lacking air superiority, and that's been a huge deficit for them and has caused a lot of casualties. The U.S. would not understand how critical

STORIES OF UKRAINE

drones are today if it weren't for Ukraine. And I don't think we're just learning from a military standpoint; if you look at the resiliency and the commitment and the courage of Ukrainians, they're teaching us something. After two years of the fight, sometimes you forget how it all started. This is Russia, who's one of our biggest enemies. They would destroy America tomorrow if they could; they would take away your farm tomorrow if they could; they would take away our freedom and our democracy. They are our enemy, period."

Q: What is the effort and timing of rebuilding?

A: "I have seen hundreds of villages in rural Ukraine that are completely leveled — there's nothing left, there's no families, no one can live there. They're all mined, and you can't even go into them. I learned a lesson in Afghanistan, seeing buildings get rebuilt, roads rebuilt in the middle of war. A Navy Seal told me, if you don't rebuild while the war is still going on, people have no hope. If people cannot see to the future, if they cannot have any faith things are going to change, and they're going to get better, they give up, and it gets hard to go on. So, in Ukraine, we are building schools, and we're building police stations."

Q: What do farmers need?

A: "As part of the Victory Harvest program, we have sent 74 combines, 84 tractors, drills and auger wagons. And so now we've helped get 260,000 acres of crops harvested and close to 160,000 acres planted. Some of you guys have had your own experiences with fertilizer shortages, but these farmers don't get to buy fertilizer or walk into a bank and get an operating loan."

DID YOU KNOW?

There are a few groups Buffett recommends to help other farmers. **Farmerhood** was started by a Ukrainian woman whose husband was fighting on the front line. Others include **Save Ukraine** and **Super Humans**.

Q: How can agricultural equipment be used for de-mining?

A: "There are hundreds of thousands of acres to de-mine. There are still farmers dying every week because of land mines. Our new project is to take what we know about equipment and apply it to de-mining with both verification and clearance. We've got about 11 acres and four bulldozers and four tractors dedicated to our testing — focused on using what we have and using GPS to map where we've run and verified where there are mines or not. The idea right now is to take a tracked John Deere 8360R, put a LaForge three point on it and build a protection plate with two rollers in the front and a big roller behind us. We are going to bring efficiency, safety and speed to this by taking technology and applying it in a completely different way."

Q: What about the grain successfully grown and harvested in Ukraine?

A: "Of the wheat harvested in Ukraine this year, 28% of the crop is from occupied territories, which means Russia stole it. We're putting out fires trying to figure out how to move grain out of the country. We've bought thousands of Ag Bags and are buying more. And we're working toward structuring something to make it easier for Ukrainian farmers to move grain — but it's not simple."

Q: What are the consequences to U.S. agriculture if Russia wins?

A: "If Russia wins, they will export all the fertilizer and the crops they can as cheaply as they can to compete with us. And then worse than that, Russia will fuel all the conflicts so they are able to maintain control of the Black Sea." **TP**

In his latest book, Howard Buffett documents the atrocities committed against Ukrainians, as well as their suffering, resilience and courage. "Courage of a Nation" documents the first two years of war in Ukraine following Russia's full-scale invasion in February 2022, and showcases a compilation of the thousands of images Buffett has captured over the 10 trips he has taken since the start of the war.



FARMER'S CHOICE AWARD



Gripp is a mobile app that helps operations digitally manage, track and report farm equipment issues across brands and even non-driven implements and tools.

during Top Producer Summit) on a mission to digitize and streamline equipment and asset tracking needs for farmers via its mobile-optimized, digital interface and QR code technology.

Gripp came from Purdue University's DIAL Ventures, which connects entrepreneurs to the leading challenges in agriculture.

"Tracking farm equipment historically has been focused on the maintenance of 'things on tires,' but we've widened our sights to virtually anything a farm operator relies on to be successful," Wiedmeyer says. "The options for today's farmers range from costly and complex software that wasn't built for ag, or, more commonly, relying on unreliable memory, shop whiteboards and, on a good day, paper forms, notebooks, sticky notes and Sharpies."

The product is now on farms.

"We have an aggressive set of capabilities coming in March and April based on farmer input, so the struggles of manual record keeping and tracking bottlenecks left to one person on the farm are a thing of the past this upcoming season," Wiedmeyer says, noting the release of new pricing tiers for small farms and no longer requiring a long-term upfront commitment to try out the system. **TP**

By Matthew J. Grassi

GRIPP.AG WAS SELECTED AS THE "FARMER'S CHOICE AWARD" by audience vote at the 2024 Top Producer Summit. Farmers saw value in having machine maintenance and operator feedback information digitized and accessible. "We're very honored to win the Farmer's Choice Award. With so many great AgLaunch companies, it really validates Gripp's approach to be selected for this award by such a high caliber audience," says founder Tracey Wiedmeyer. "Our core mission is resonating with farmers of all shapes and sizes."

Wiedmeyer himself found value in the conference's networking.

"There was a level of quiet sophistication that was refreshing to see, which is a real testament to the Top Producer event and its ability to draw some of the most down to earth, elite farmers in the country," he says.

Gripp.ag is an AgLaunch 2024 startup (one of nine showcased

Weather, Financial, and Policy Outlooks

One afternoon presented an opportunity for attendees to hear a series of subject matter experts give their updates and outlooks for issues effecting the farm economy.

"As growers, we do not have the ability deflect risk. We absorb it. You can protect against it, but not deflect it,"

says Nutrien meteorologist **Eric Snodgrass.**



"Farm income declined in 2023 and will show a further decline in 2024. It's important to remember, it comes down from exceptional levels. We thought 2010 to 2013 were exceptional, but 2021 and 2022 turned out to be something even higher,"

says **Nate Kauffman**, Federal Reserve Bank.



"At this point, the farm bill is going backward. I'm hearing things you'd hear at the end of the farm bill cycle, not the beginning,"

says ProFarmer policy analyst **Jim Wiesemeyer.**



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IN OR OUT ON SUSTAINABILITY?

MANAGEMENT

RECENTLY, I HEARD SOMEONE MAKE THIS COMMENT:

"There really isn't very much credit for being an early adopter in an industry that will someday just become regulated."

Cynical or true? Or somewhere in the middle? Are there advantages to being involved early or should we just wait?



Sarah Beth Aubrey's mission is to enhance success and profitability in agriculture by building capacity in people. She provides executive coaching as well as peer group and board facilitation.

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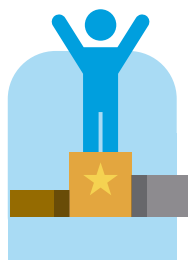


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Advantages Of Being An Early Adopter



COMPETITIVE ADVANTAGE

Early adopters can gain a competitive edge by demonstrating their commitment to sustainability and environmental responsibility. This can attract environmentally conscious customers and partners, such as farmer land-owners or buyers willing to pay a premium.



COST SAVINGS

Typically, we might think of cost savings as an immediate advantage, but in truth, practice changes might cost more up front. However, implementing carbon reduction strategies and technologies before they are mandated can lead to significant cost savings in the long run.



ACCESS TO GREEN FINANCING

Some financial institutions and investors are increasingly interested in funding sustainable and environmentally responsible projects. Early adopters might have an easier time accessing green financing options, which can help fund their sustainability initiatives and expansion plans.



REGULATORY PREPAREDNESS

Early adopters have the advantage of being well-prepared for future carbon regulations. They are already tracking emissions, implementing reduction strategies and have the necessary systems and processes in place to comply with potential future regulations when we are talking about the stick and not the carrot.

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Advantages Of Being An Early Adopter



INNOVATION LEADERSHIP

Early adopters are often seen as leaders in their industries. They have the opportunity to innovate and develop new products and services that cater to the growing demand for environmentally friendly solutions.



GLOBAL MARKET ACCESS

As global efforts to combat climate change intensify, being an early adopter can position businesses to access international markets and partnerships that prioritize sustainability.

Disadvantages Of Being An Early Adopter

HIGH COSTS

Early adopters often pay a premium for being the first to own a new product or service. Prices might drop significantly as the technology matures, leaving early adopters feeling like they overpaid.



HIGH LEVEL OF EFFORT

Being first often means building the market even if you are buying products or getting freebies from vendors. The added labor, practice changes and inconvenience have a large cost.



PERCEPTION RISK

The topic of sustainability is politicized and even though most of us employ many practices that could be considered sustainable by today's terms, putting a label on it might be a risk. Customers might feel you're giving in to a politicized agenda or that you've taken on a view different from their own. The job of talking them through that could be pretty prohibitive.



LACK OF MATURE ECOSYSTEM

New technologies and markets might lack the ecosystem of compatible software, accessories and services that older, established products enjoy. This can limit the overall functionality and usefulness of new technology.



Ultimately, it's important to strike a balance that aligns with both your goals and your comfort level with uncertainty in the rapidly evolving world of technology and innovation. When it comes to agricultural sustainability, we could easily argue the early adopters did so decades ago. And in a time when it seems suddenly every business and industry is noticing agriculture and we have manufacturers, bankers, governments and general consumers suddenly talking about soil health and animal welfare, as if it's a new trend, it can be easy for those who have known this for a generation to, well, yawn. Yet, new innovations and new financial opportunities are beckoning. My best suggestion: Do so according to your values and goals and with a nod to the legacy you've been working toward. **TP**



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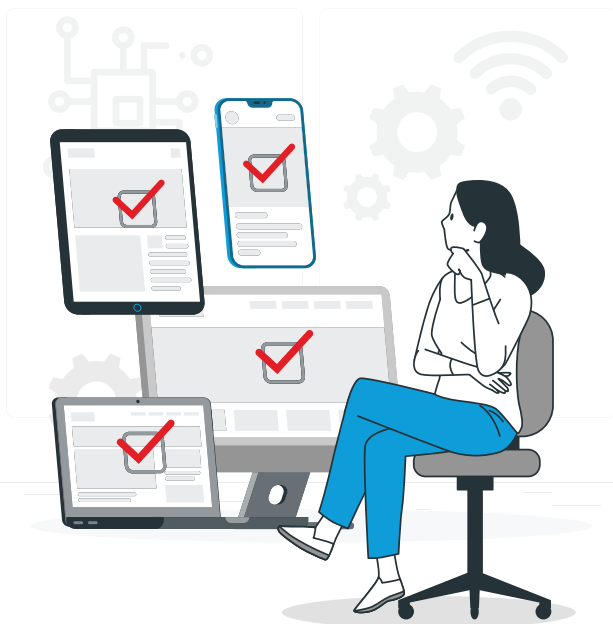
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SCOUT TO AVOID TECH PITFALLS

Take a purposeful approach to
adding new technology

By Matthew J. Grassi

JUST AS A SOMEONE ENTERING THE NFL DRAFT must run the 40-yard dash within a similar range to the other top prospects from previous years, there are boxes any new release in ag tech needs to check to ultimately prove useful and profitable to the farmer.

“At the end of the day, you want your technology to make you money, save you money, or create new opportunities for you,” says Steve Cubbage, ag tech industry expert and founder of Longitude 94. “Or, some technology may even save the day as far as having battery or generator backup, or even redundant internet (options). You want it to do something for you, and you want it to return something to the bottom line.”

And just as year-to-year outcomes fall squarely on the shoulders of each farmer,

the ability to sort through the noise and complete an accurate “self-scout” (former New England Patriots head coach Bill Belichick is noted as one of the NFL’s all-time great self-scouters) can save you from spending capital on technology or machines that don’t return anything to your farm’s bottom line.

It boils down to one question Cubbage asks farmers to consider, “what’s your farm’s technical debt?”

Cubbage has a few more salient points in how farmers should look at new technology before adopting.

- **Efficiency Matters:** Automation is where production agriculture has historically seen the greatest leaps in productivity (think Eli Whitney’s cotton gin). Or a modern-day example would be the advent of auto-steer. Machine guidance is the fastest and easiest ROI a farmer can find.
- **Robotics and AI:** Advances made across these two technology segments will “likely lead to leapfrog gains in productivity,” he says.
- **Opportunities Might Require New Tech:** Carbon credit markets are just one example that fits here. There might be systems or implements you must upgrade to collect the right type of data to participate (i.e. get paid). Even though it costs money up front, these are the type of investments that can have a big impact when farm revenues go flat or into the red.

“Production ag is a costly business. I mean, you write six, sometimes seven, figure checks for putting a crop in each year,” Cubbage says. “Reducing waste is important but so is looking at technology that can increase your ROI and shrink costs at the same time. Anytime you find something like that, that’s a pretty good day and probably a pretty good investment.” **TP**



“You want your technology to make you money, save you money, or create new opportunities for you.”

~Steve Cubbage

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1. Summary of 2019-2022 RevX, field-scale demonstration trials. For location details, visit [RevXFields.com](https://www.RevXFields.com). Veltyma fungicide applied at 7 fl oz/A to VT-R3 corn.

2. 2019 BP-205-W Applied Research in Field Crop Pathology: Assessment of fungicides applied at VT/R1 for tar spot in corn in northwestern Indiana, 2019 (COR19-17.PPAC). <https://www.extension.purdue.edu/extmedia/BP/BP-205-W.pdf>.

AHEAD OF THE CURVE

TECHNOLOGY

PASSIVE INCOME IS INCOME ACQUIRED WITH

minimal labor to earn or maintain, and it's usually combined with another source of income. Rental income is the best-known example of this. There are several sustainability practices farmers can implement on the farm to begin to create their passive income. Creating these payments requires effort and sometimes capital investments (no different than rental income, which requires both effort and capital investment).

NITROGEN PROGRAMS

Implementing a nitrogen management program is likely the most straightforward sustainability program to execute on the farm to create passive income. Truterra, Nutrien Ag Solutions and Indigo Ag all have nitrogen management programs farmers can implement to receive up to \$5 per acre. They require a reduction in your total nitrogen applied and, in the case of Truterra, only farmland in Illinois, Indiana, Kentucky and Ohio is eligible. A nitrogen management program might be easier to implement as it does not require significant capital investment or major changes in your farming practices. Adding nitrogen stabilizers, implementing variable rate fertilizer, or splitting the application of nitrogen can reduce and improve the available nitrogen for your crops. To ensure you do not impact your yield, you should build a plan with your local adviser or agronomist to ensure you can qualify. Ask your local ag input retailer about nitrogen management programs.

PRACTICE CHANGE

Implementing no-till or strip-till on the farm as a sustainability practice can make you eligible for certain USDA financial assistance program payments. For example, the USDA financial assistance program's potential payout is currently \$25 per acre for implementing no-till or strip-till on your operation. There



Darryl Matthews, with more than three decades in the technology industry, brings his business sense and tech know-how to reveal opportunities for farmers.

**Sydney Matthews contributed to this column*



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farmjournal.com

are many benefits to no-till, which come with time and effort; however, these practices take significantly more effort and capital investment. USDA Economic Research Service reports just 34.6% of U.S. cropland is farmed using no-till practices. Implementing no-till is harder and requires more effort to implement and maintain than some of the other options.

CARBON CREDITS

Qualifying for carbon credit programs is another sustainability practice that can create passive income. This requires effort and a close relationship with your carbon credit supplier. There is potential to be paid \$30 per acre from Truterra or Indigo Ag, but at the same time, this does require changes in farming practices, for instance, adding cover crops, reducing tillage and rotating crops. **TP**

The USDA financial assistance program's potential payout is currently \$25 per acre for implementing no-till or strip-till on your operation.



WHAT TO KNOW About Carbon Intensity

By Margy Eckelkamp

THIS YEAR'S CROP IS SETTING UP A

new revenue opportunity in 2025.

As of Jan. 1, 2025, biofuels producers can qualify for 45Z tax credits, which were part of the Inflation Reduction Act. Grain will be assessed with a carbon intensity (CI) score, which has a set of parameters determined by the Department of Energy. The standard CI score for corn is about 29.1, and per the 45Z provisions, a biofuel manufacturer must get its total CI below 50 to qualify.

PAYOUTS ON A SPECTRUM

Mitchell Hora says his company, Continuum Ag, has helped get CI scores on more than 185 million bushels already, with a goal of getting 1 billion bushels scored by the summer. And so far, on average, those CI scores are nearly 20 points below the baseline.

As Hora explains, that is where there is potential money to be made.

"As farmers we can lower our carbon footprint, get that score ran, get it verified and help our friends with the ethanol companies to maximize this opportunity utilizing a more sustainably produced crop," he says.

The financial benefit farmers receive needs ironed out, and it depends on the ethanol producer.

"The ethanol companies, if they are paying federal income tax, will be able to utilize these credits to reduce their tax liabilities. If the company doesn't pay federal income

tax, or creates more credit than what they need, those credits can be resold on the secondary market," Hora explains.

He sees the financial payout to farmers varying. Already, he says one ethanol producer is paying farmers a 2¢ premium on grain. At the same time, he's heard one ethanol company say after they cover expenses, they plan to pay the farmer 100% of the remaining tax credit value.

TIMING MATTERS

"We're talking about fuel produced in 2025, but that's going to use the crop we're growing this year," Hora says.

Because the CI score depends on current on-farm practices, farmers can start tracking, documenting and making decisions that will drive their CI score.

"It's time to get the data organized," Hora says. "This is due to sunset in 2027, and it may be extended — we don't know. But it's a short time frame for this opportunity."



Hear More About Carbon Intensity

Paul Neiffer interviewed Mitchell Hora on "The Top Producer" podcast to learn more about this potential financial opportunity.



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HORA 2023 SCORE

UNLIKE PREVIOUS OPPORTUNITIES

Hora highlights how CI scores are applicable to every farmer.

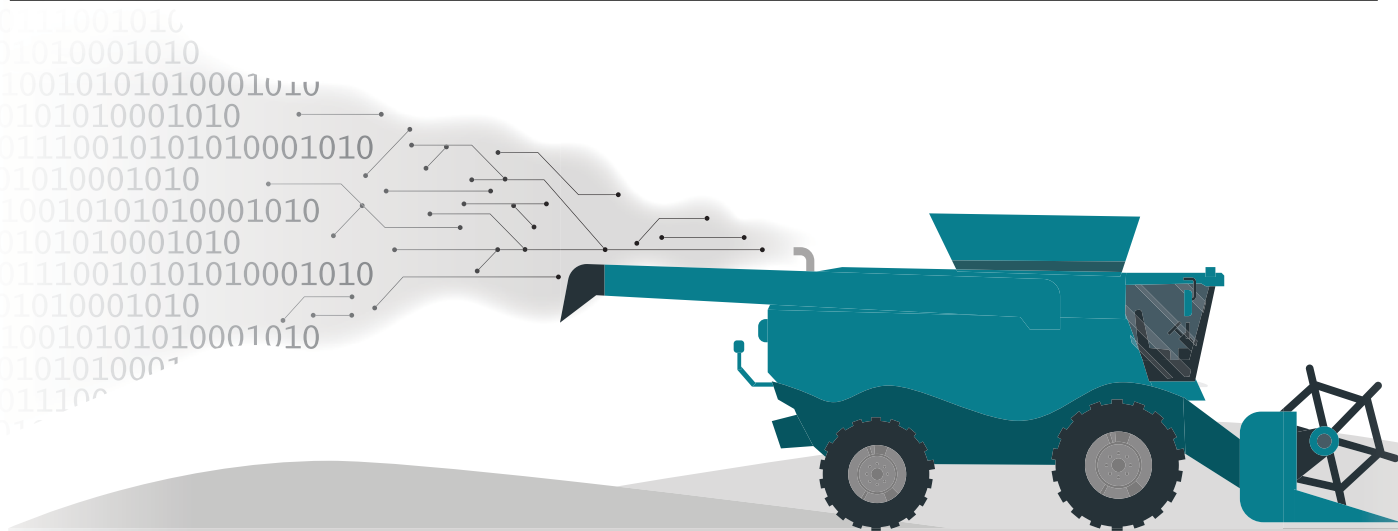
"My family has been no tilling since the late '70s and uses cover crops. With other carbon programs we didn't qualify because we were already doing the practices," he says. "That's not the case of carbon intensity. It's strictly about what is the carbon footprint of your 2024 bushels. It's per acre and per year."

And while there's no guarantee you'll make money, Hora says you won't have the opportunity without proper data. **TP**



IT'S A DATA WORLD AND WE'RE LIVING IN IT

MACHINERY



IT'S BEEN INTERESTING TO WATCH the data revolution unfold in our ag space over the years. Back in 1989, I was 23 years old and set sail building a business around the idea of compiling sale price data on all types of equipment sold at auction. This was actual sale price data that would help folks figure out the real value of a piece of equipment when it came to buying, selling, trading or appraising.

Big data became the term as the 1990s began to unfold, but no one told me, “Ah, young Machinery Pete, you are building a big-data business.” I was simply and solely focused on creating a better, more trusted source for accurate and current used equipment valuations.

But data doesn't happen all at once. It took me two full years to find a company that could make the website I was wanting and needing in order to move away from the auction price books we were publishing. I finally found Inetium Inc. in Minneapolis and we turned the lights on at MachineryPete.com the first week of March 2000. It cost me \$25,000 to do the website. I didn't have \$25,000. I had two young daughters and wasn't that far removed from working two part-time jobs to make ends meet. It was just one of those moments in life where you have to decide



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whether you want to take that chance or not. I think age teaches us, and in most cases, we look back and are glad we took that chance.

BUILD YOUR OIL WELL

Around 10 years ago, a farm equipment dealer principal I know was at a national meeting, and the keynote speaker was the CEO of Intel at the time. His message to dealers was “data is the new oil.” Bingo.

As the data revolution in ag continues to accelerate, my increasingly grayed noggin has been thinking about the ways to utilize the mind-boggling flow of data into and through your equipment that would help you buy, sell and trade it.

Data exhaust is helpful to guide you in making more informed agronomic decisions about your fields and farms, but I see gold in your data exhaust when it comes to making your tractor, combine, planter and sprayer worth more money.

There's a game-changing opportunity ahead to use your data exhaust to help “tell the story” of your equipment. Potential buyers are coming from farther away and have grown accustomed to clicking the bid button on both online-only auctions and live sales with online bidding.

When I look at the near future, I don't think anecdotal descriptions of used equipment for sale will be good enough. "One owner, always shedded," is helpful, but you need more. Tell them and show them specifically how your tractor was used the past three years. Show them your machine's data exhaust trail of use and care/maintenance.

Our Machinery Pete auction price data screams that when buyers have a higher degree of trust on the condition of the piece of equipment they're looking at, they value it accordingly and bid more aggressively. As they should. Higher trust equals higher prices, and it always will — even long after Machinery Pete is gone.

Like it or not, data is our new shared language. Don't fight it. Embrace it. Opportunity is ahead in more ways than you think. **TP**

"When I look into the near future, I don't think anecdotal descriptions of used equipment for sale will be good enough. Show them your machine's data exhaust trail."



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FIRING ON ALL CYLINDERS

Autonomy looks different depending on where you live

TECHNOLOGY

By Tyne Morgan

AUTONOMY IN AGRICULTURE is starting to fire on all cylinders across the U.S., but the size — and capabilities — depends on geography.

Curt Blades, senior vice president at the Association of Equipment Manufacturers (AEM), says in the western U.S., automation is geared toward the shortage of labor.

“We’ve never been able to mechanically harvest a strawberry in an efficient way because we haven’t had the technology, the artificial intelligence or the sensors to be able to detect whether it’s the right shade of green, the right shade of red, and then also handle it with kid gloves. That’s available now,” Blades says.

In the Midwest, major equipment manufacturers such as Case IH and John Deere showcased their largest horsepower combine and tractors yet, all with autonomous capabilities, at recent farm shows.

“We’ve been very clear that by 2030, we want to have a full production system for corn and soybeans that is fully autonomous,” says Aaron Wetzel, vice president of production systems for the production and precision ag business for John Deere.

Across the entire equipment industry, Blades says ag tech trends are unfolding quickly.

“I don’t think we can quite comprehend how different the space is going to look 10, 20, 30 years from now,” Blades says. “Whether it’s bigger and bigger machines that have elements of autonomy built into them to solve for labor shortages, maybe it’s using sensors that let you see and detect, and then react and do something different, that’s the kind of autonomy that we’re absolutely seeing today.”

TECHNOLOGY AS A TOOL

Kubota is another company embracing the changing world of ag equipment.



New Holland has announced a fully-autonomous tractor. It’s currently a concept model that has yet to be released in the U.S.

The Case IH AF 11 combine isn’t just a monster in size. It has a dual rotor design and ability to harvest 8,000 bu. of corn per hour.



Scan the QR code to see these autonomous machines in action.

“We need technology to harvest the data so we can make better decisions,” says Todd Stucke, president of Kubota Tractor Corporation and the current chairman of AEM. “So, can we automate our equipment or use technology to make the best operator, your everyday operator, more efficient? I think that’s where we’re investing in.”

He adds as automation becomes more widespread in agriculture, it’s important to ensure regulation is following the technology.

“We don’t want to have an autonomous tractor that we have to have a person in, so those are the type of things that our industry must address,” Stucke says. **TP**



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3 FARM MANAGEMENT OPPORTUNITIES

New survey provides perspective on respondents' use of technology for business

By Margy Eckelkamp

AT THE END OF 2023, Bushel conducted its State of The Farm survey via email with 871 farmer respondents to give perspective on their businesses and adoption of technology.

The three highest-rated management opportunities included:

- **increasing efficiencies**
- **improving marketing strategy**
- **tracking field performance**

"We are in a second phase of ag tech," says Ryan Raguse, co-founder of Bushel. "We aren't in an overly mature state; we're still somewhere in the middle ground. The farmers growing in scale are the ones adopting technology, and they are thinking of how the tools relate to their business."

Raguse says it's Bushel's focus to bring in the next era of value chain productivity for ag with its digital infrastructure to move data, transactions and money.

As such, there are examples from the report highlighting aspects of those three top opportunities respondents brought to the forefront.

OPERATIONAL EFFICIENCY

Year over year, there has been a 12% decrease in farmers receiving grain contract payments via paper check.

The younger respondents, under 40, were more likely to value a quicker time span from requesting payment to receiving the funds.

A new tool Bushel is releasing for spring 2024 will give customers of Compeer Financial access to their lines of credit and repayment via Bushel Wallet. This was piloted last fall and will be rolled out this year with Compeer, with future financial partners to be announced.

Another interesting finding from

who have more than 2,000 acres are comfortable marketing 50% of their crop at or before planting. However, only 25% of smaller farmers feel the same. In the study, Bushel offered 11 marketing strategies as an option, and the larger, growing farms used nearly all of them.

Respondents said the most relied-on resource for grain marketing is local grain buyers.

FIELD LEVEL PERFORMANCE

Another takeaway is the heavy adoption of technology by young and growing farmers.

More than half of respondents say apps and software have created value on their farm by increasing convenience. Farmers under 40 are also more aligned to see the value in how to manage costs and increase revenue.

The top activities apps/software are used for: weather, accounting, financial record-keeping, yield mapping and farm management.

"What's interesting is whether it's digital payments, auto-steer or other technology, once a farmer adopts it, they don't stop using it. Maybe it's not something they asked for directly, but if they see the value, they keep using it," Raguse says. **TP**



"We are really in a second phase of ag tech," says Ryan Raguse, co-founder of Bushel.

the study is farmers hold texting as the No. 1 preferred method to receive information from grain buyers, highlighting a desire for efficiency over personal relationships.

MARKETING STRATEGY

From the study results, high-growth producers are more likely to price multiple crop years and price when profits are achievable while larger producers are more likely to follow an adviser's recommendation and price when profits are achievable.

More than one-third of farmers



READ MORE

To read more about the State of The Farm survey, scan the QR code.

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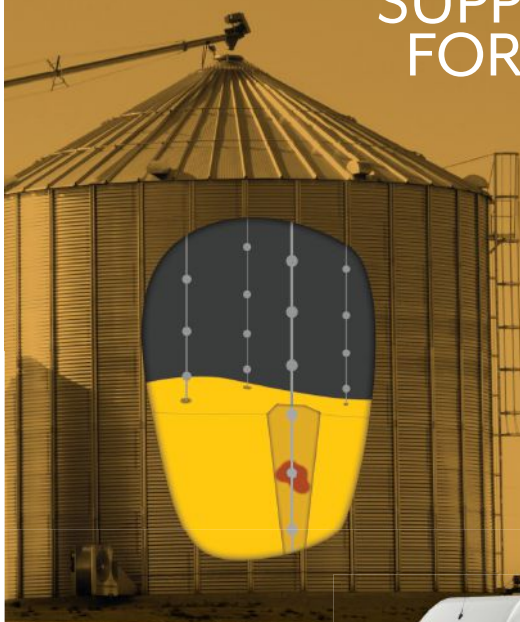
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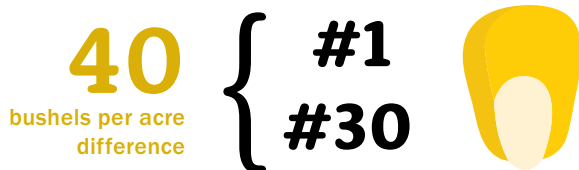
(Via a joint venture
with John Deere)

fully autonomous orchard
sprayer systems are
operating in eight states.

A WIDE GAP BETWEEN THE TOP HYBRIDS

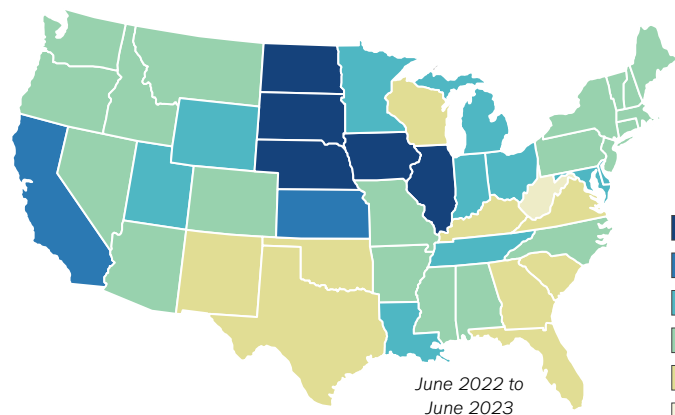
(According to Billy Rose,
AcreShield CEO)

The average yield difference between the #1 and #30
top performing commercial corn hybrids.



FARMS THAT USED PRECISION AG PRACTICES

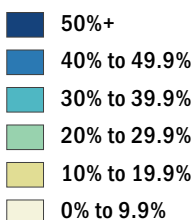
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U.S. Average

27%

of farms used
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practices



MORE AVAILABILITY

72%

of grain buyers
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WHERE TECHNOLOGY GOES TO WORK

The U.S. Government Accountability Office (GAO) released a study on the benefits and challenges for technology adoption, finding that while it can help efficiency, profitability and the environment, high up-front costs can be a barrier for some farmers. Precision agriculture technologies have been available since the 1990s, but only 27% of U.S. farms or ranches use them to manage crops or livestock, based on 2023 USDA reporting (see above map). From field work to business decisions, leading farmers are finding ways to tap technology and make it work on the farm.

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A photograph of a man and two children standing on a red metal structure, possibly a ramp or walkway, in front of a corrugated metal building. The man, wearing a green shirt, is looking off to the side. A young boy in a blue t-shirt and a young girl in a purple shirt are also looking in the same direction. The boy's t-shirt has a graphic that says "BUCKEYE STATE".

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